



STATE IN **FOCUS**

Kaduna

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Kaduna State: 'The heart of Agricultural Nigeria'

State Overview

Kaduna State is known as a hub for agriculture centred activities with high crop production performance in most crops especially maize. The state is closely aligned with agriculture owing to the advantageous climatic and soil conditions it has, as well as a predominantly agrarian population. The word Kaduna is said to be a modified version of the Hausa word 'Kadunna' meaning crocodiles as there were previously many crocodiles in the Kaduna River. The biggest cities are Kaduna (The capital city) and Zaria. The State is regarded as a trade centre and a major transportation hub for the surrounding agricultural areas, with its rail and road junction providing access to markets.

In recent times, efforts by public, private and non-governmental organisations have further veered it towards increased commercialization of its produce, deepening its influence across multiple value chains. Agriculture is a major sector in Kaduna state and the state has been contributing tremendously to the overall Agricultural sector in Nigeria as it has a wide array of arable land, soil texture and beneficial climate that make it conducive for growing several crops both for food and commercial purposes. Kaduna state was ranked the fourth most contributing state to the Agricultural

sector of Nigeria in 2017 (NBS, State GDP 2017) and as such the bank of Agriculture is situated in the state.

The state, which was founded by the British Colonist in 1900 is located in the Northwestern Part of Nigeria and rose to become the capital of the defunct Northern region in 1917. This is a status It retained until 1967. It is bordered by seven states Zamfara, Katsina, and Kano to the north; Bauchi and Plateau to the east; Niger to the west; Nassawara and Abuja Federal Capital Territory to the south.

Kaduna is the sixth largest state by landmass in Nigeria at 42,481 square kilometres. It also has the third-largest population in Nigeria with an estimated 9.02 million people living in the state, next only to Kano and Lagos. (National Bureau of statistics 2019). In the Northern part of Nigeria, the state stands out as one of the most advanced in development, both in human capital and service delivery, making it one of the leading economies in Northern Nigeria which has embodiments of growth.

In 14 years, Kaduna state population experienced a steady growth of 3%, from 6.2 million people in 2006 to 9.02 Million in 2019. Presently about 77.5% of the population is actively engaged in farming. Breaking down the population by sex shows that there were 106.6 males per 100 females in 2017. Kaduna

Figure 1: Map Showing Kaduna State



state has a large youthful population as about 43% of the population is estimated to be below 15 years of age, 54.1% aged 15-64 years and 3% are the older population at 65 years and above¹.

Gross Domestic Product

According to numbers contained in the National Bureau of Statistics (NBS), State GDP report 2017, the Gross Domestic Product of Kaduna state recorded was valued at ₦2.69 Tn while it was ₦2.35 Tn in 2016 representing a GDP growth of 16.2% year on year (YoY).

The high growth is attributed to the tremendous contribution made by the Agricultural sector of the state as it had the largest share due to continued productivity.

Kaduna state's Gross Domestic Product grew by 16% (year on year) in 2017 representing an increase of 7% points from the 2016 growth of 9% (YoY). Kaduna state's agricultural sector remains the largest source of revenue as it contributed 38% to the total GDP of the state. This is followed by ICT (19%) and Trade (12%). Oil and Gas, Solid Minerals and Utilities Sector

did not contribute to the GDP of the state as these sectors are not functional.

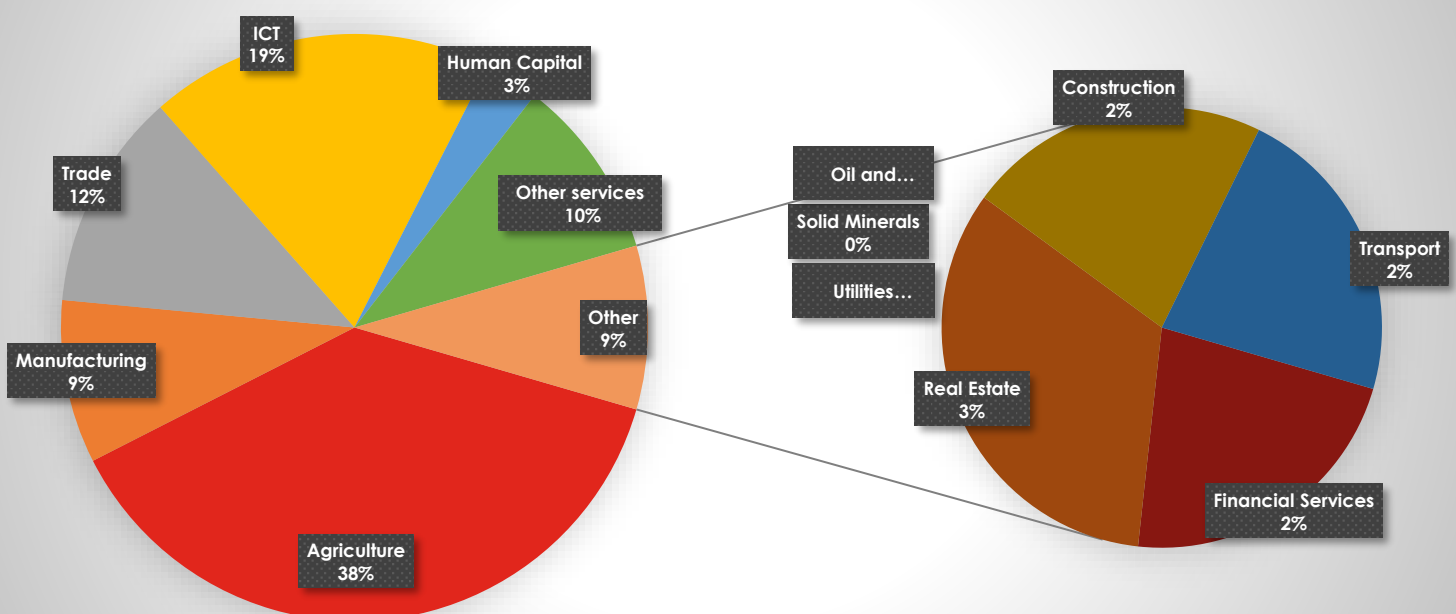
Among a total of 22 states under review, Kaduna state was ranked the 4th highest contributing state to the agricultural sector state share in Nigeria. It contributed a total of ₦1.09 Million to the total agriculture GDP of the country. The contribution by agriculture was majorly driven by output in crop production which recorded the highest contribution when compared to Livestock, Forestry, and fishing contributions to the sector.

Agricultural Policies

The Ministry of Agriculture founded in 1980 is saddled with the responsibility of providing policy direction for the State Government on her agricultural sector. It also provides oversight function of its implementing agencies - Kaduna Agricultural Development Agency (KADA) and Kaduna State Livestock Regulatory Authority (KADLRA).

Its vision is to make Kaduna State the agricultural hub of the Nation and to achieve this, they have adopted a mission to adequately equip Kaduna state citizens with

Figure 2: Sectoral Contribution to Kaduna State GDP, 2017, %



¹ KDSG, 2017

best in class agricultural knowledge in a bid to empower them to power the economy of the State.

The Ministry of Agriculture and Forestry Department, Kaduna state Government outlined 12 broad policies currently being implemented to further boost productivity and value addition in the agricultural space. They include:

1. Liberalize foundation seed policy to allow the private sector to commercialize seeds
2. Eliminate government distribution of fertilizers and replace with private sector distribution
3. Move away from a flat fertilizer price subsidy to targeted support to smallholder farmers
4. Incentives to engage young commercial farmers for farming as a business
5. Development of Agribusiness Entrepreneurship Centers
6. Farm skill acquisition centres
7. Access to land and finance
8. Create institutions to support the agricultural transformation agenda
9. Marketing Corporations, to replace marketing boards
10. The guaranteed minimum price for food crops to stabilize prices
11. Revise the Land Use Act to enable easier access to land for investors
12. Rapid expansion in irrigation facilities and revamping of existing ones

Agro-ecological Distribution

An Agroecological zone is based on a unique combination of soil, landform and climatic characteristics and vegetative cover. Based on these characteristics, Kaduna is mainly divided into two agroecological zones with Northern Guinea Savannah as the major zone while derived Savannah is mostly located in the southern part of Kaduna.

The Northern Guinea savannah is characterized with shorter grasses and fewer trees and it is characterized by low rainfall and long dry season. This is why the cultivation

activities are mostly skewed towards the rainy seasons as little irrigation practices are used by the farmers. The sole crops cultivated in this zone are maize and grain legumes such as soybeans, cowpea, groundnut.

Derived savannah, the second zone located in the southern part of Kaduna; is the transition between the tropical rainforest and guinea savannah zones. The zone is covered with scattered trees and tall grasses and it has a good potential for food production as maize, cassava, yam and rice, ginger are the major crops grown in this zone.

Climatic Condition

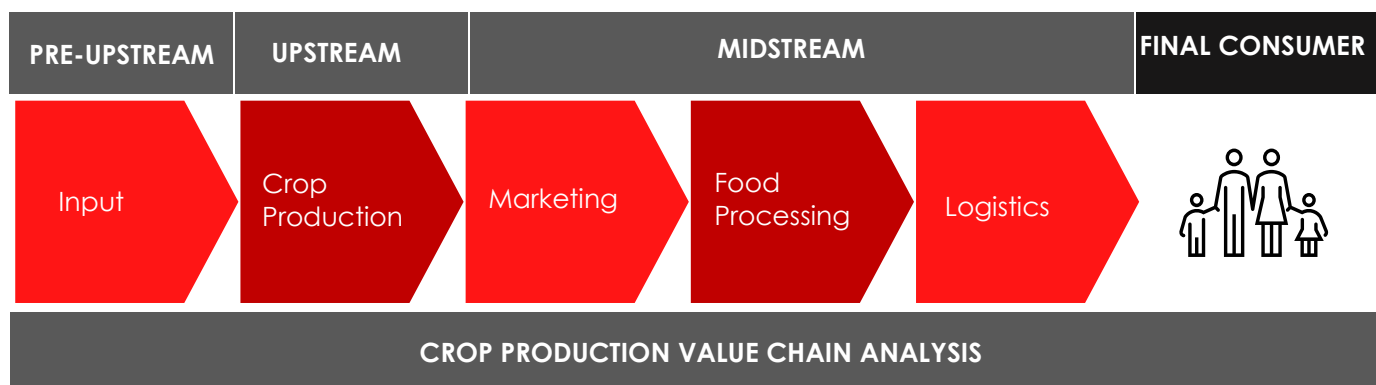
Kaduna state lies on 613 m above sea level and has a tropical climate. The state has an average temperature of 28.6 °C. April is recorded as the warmest month at 23.3 °C on average, while August is the coldest month of the year.

Rainfall in the state is Unimodal as it averagely starts in April/May and ends in October. According to NAERLS 2019 West season Executive summary, Kaduna state recorded the highest rainfall in the Northwest region with Zaria recording the highest rainy days in 2019 (70 days). Farming in the state is skewed towards the rainy season as most farmers do not have the practice of using irrigation facilities. About 80% of farming takes place during the rainy season and About 20% during the dry season.

Agricultural Value Chain Analysis

The state boasts of complete integration of all the nodes in the various commodity value chains. The value chains span from the pre-upstream/ pre-production players to the final consumer. In particular, the state ranks high in the production of various commodities and also serves as a major trading hub, ensuring that producers have highly liquid markets to participate in.

Figure 2: Value Chain Analysis



The input suppliers kickstart the functioning of the value chain, furnishing farmers with inputs required for the cultivation of commodities. They are closely followed by the farmers and other producing entities acting in the production node. Thereafter, the marketers, processors, and final consumers. The nodal activities of the value chain are structured as such with production initiating and marketing, processing and consumption forming the other segments of the chain. Although the core structure of the value chain has remained unchanged over the years, the level of commercialization of the value chain continues to improve.

PRE-UPSTREAM SECTOR:

Input Supply

The pre-upstream node of the agricultural value chain in Kaduna state is robust and highly valuable. An estimated, 85.2% of the 1.3 million farming household's resident in Kaduna utilize chemical inputs such as NPK, Urea, SSP, MOP etc. for cultivation. This analysis depicts the value of this sector to the overall economy of the state. Needless to say, the quantity of input used in production in the country still reflects a huge opportunity to be exploited.

Due to the prioritization of research and development by the Agricultural Department of the Ahmadu Bello University Zaria, high-quality seeds are made available in the state and farmers easily have access to these seeds for cultivation. Kaduna state government has

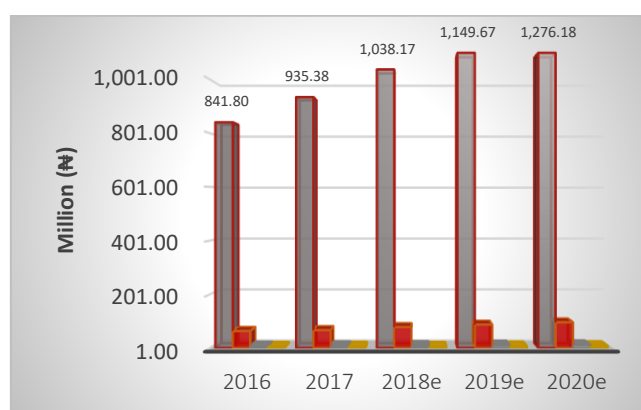
put on ground various programmes that cater to the input needs of farmers in various LGA's of the state.

UPSTREAM SECTOR

Crop Production:

Crop production has been contributing tremendously to the total GDP of Agriculture in Kaduna state. This is due to certain factors such as agriculture being the highest employer of labour, Good arable land for cultivation, increased effort by the government, organizations, and other individuals to improve crop yield etc.

Figure 3: Contribution to the Agricultural Sector of Kaduna State (Million ₦)



Source: NBS State GDP 2017, AFEX Research 2020(e).

Over 5 years, Crop Production has continuously been the major contributor to Agriculture as it has accounted for averagely over 92% of share to the Agriculture of the state; Livestock accounted for averagely 7%, while Forestry and Fishing accounted for the remaining 1% of the

share to Agriculture. In 2020, Crop Production attained the highest share amongst the 4 agricultural activities as it generated an estimated ₦1.3 billion which accounts for 92% of the total agriculture share of the state's GDP with Livestock, Forestry and Fishing accounting for 8%.

The 5 major crops cultivated during the wet season farming are maize, paddy rice, soybeans, guinea corn and beans while during the dry season. Tomatoes are highly cultivated in large quantities while maize, potatoes, paddy rice and okra are cultivated in lesser quantities (KASS 2017). However, maize, ginger, paddy rice and soybeans are the highest produced crops in the state. Kaduna state produced a total of 937,820 MT of Maize, Paddy rice at 348,970 MT, soybeans at 97,480 MT and ginger at 523,540 MT².

Figure 4: Top Crops Cultivated in Kaduna State

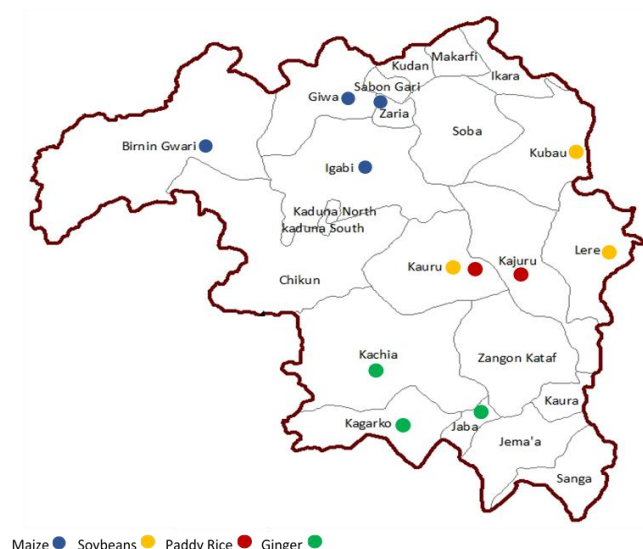
Top Crops Cultivated in Kaduna State			
Wet Season	% of Farmers	Dry Season	% of Farmers
Maize	31.8%	Tomatoes	2.2%
Paddy Rice	12.4%	Potatoes	0.6%
Sorghum	9.0%	Maize	0.3%
Soybeans	8.4%	Paddy Rice	0.2%
Beans	7.6%	Okro	0.1%

Source: KASS 2017

ANALYSIS OF TOP 4 MOST-PRODUCED CROPS

The state is the leading maize producer responsible for about 24% of the national output; largest producer of ginger (82% of the national output); second-largest producer of soybeans and fifth largest producer of paddy rice³.

Figure 5: Top Producing LGA For Top Crops Cultivated In Kaduna State



Midstream

Marketing

After harvest and crops have been dried and bagged, farmers transport bags of different commodities to their local market to sell to merchants. Since production capacity is low due to smallholding of land and other factors, big processors who require large volumes have no choice but to depend on merchants who go to the different local markets to source for these commodities.

Access to markets: Most farmers sell their produce in the markets across the state; however, they travel long distances to reach some of these markets. Travel distance to market is highest in Kuara LGA (26km) with Kubau and Sanga(15km) LGA's following behind⁴.

² National Agricultural extension and Research Liaison Services (NAERLS) 2018

³ Kaduna state Agricultural structure Survey (KASS) 2017

⁴ KASS 2017

Logistics

Logistics in the state involves road, air, rail transport, and post and courier services. According to NBS State GDP, Transport contributed 2% to the GDP of the state in 2017.

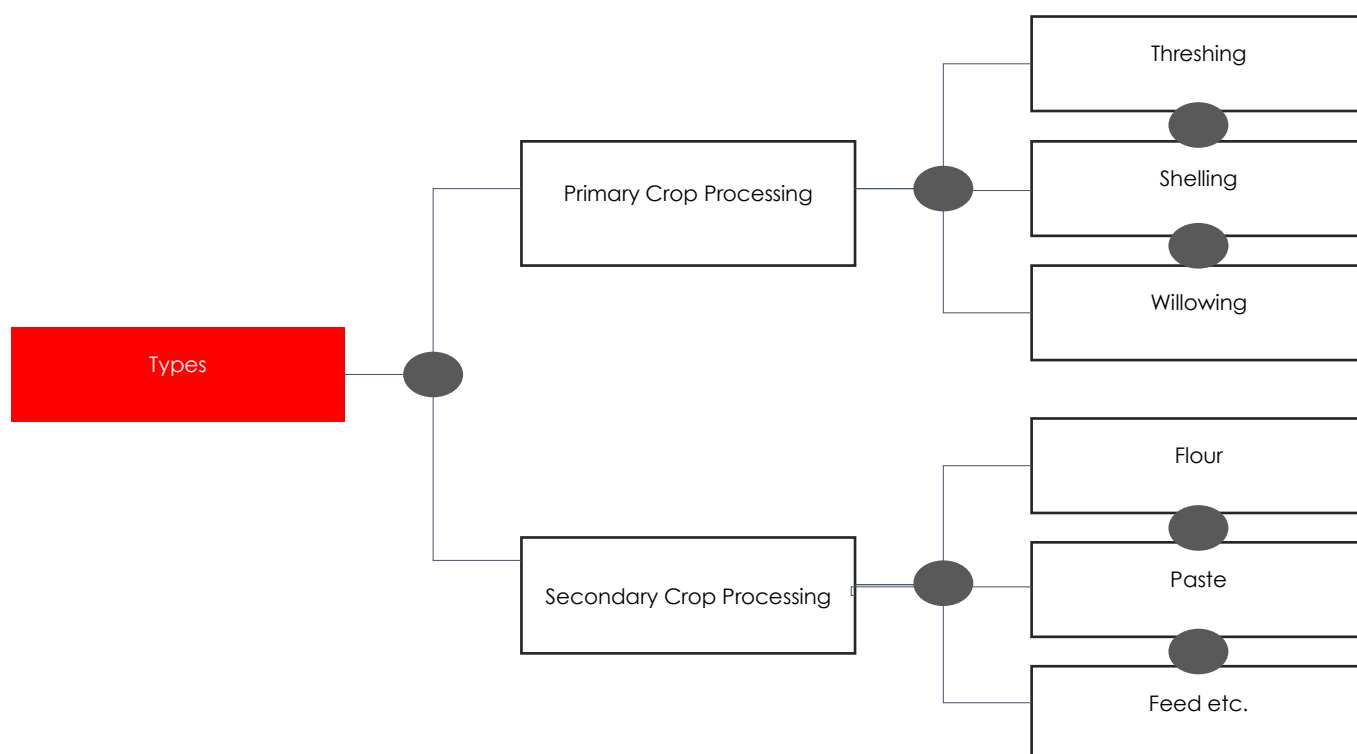
Since the late 1950s, Kaduna became a major industrial, commercial, and financial centre for the northern states of Nigeria. Kaduna's broad industrial base and transport facilities make it an attractive cluster region. The state continues to enjoy a competitive position in transportation as a result of its central location. It is a major trade route as it has links between the 19 northern states and southern states as well.

Kaduna serves as the logistics and transport hub for the northern states as it has major road networks including its railway network which has 3 major junctions in the state. The Kaduna-Abuja railway network conveys thousands of commuters and goods daily bringing markets and opportunities to the state.

Processing/Milling Sector

Crop processing is an essential step in converting raw harvested farm produce into marketable products with longer shelf life. It is a form of agricultural mechanization which adds value to agricultural products by improving the quality of the product as well as boosts profit.

Figure 6: Types of Crop Processing



There are two main types of crop processing done; Primary crop processing is majorly threshing, shelling and willowing while secondary crop processing involves the conversion from raw form to another form such as converting Maize to animal feed, cassava to garri flour or Tomatoes to paste etc. Processors most times procure their crops from merchants/ traders than directly from farmers as Nigerian farmers are majorly smallholders who cannot produce large volumes.



Case Study: Olam Nigeria; Poultry and Fish Mills

AFEX Research Analyst had an interview with a representative from Olam.

Olam Nigeria Poultry and Fish feed Mills is one of the biggest livestock feed processors in Kaduna state. They have two main plants in the country; their biggest plant is in Kaduna state and the other plant is located in Kwara state, Ilorin. They process two types of feed: Poultry feed and Fish feed.

On average, they process about 28,000 MT of feed monthly across two of their plants (10,000 MT in Ilorin and 18,000MT in Kaduna). Their plant in Kaduna state has a huge potential to thrive further due to the Location advantage accrued to it; the core raw materials which make up about 65% of their feed is largely produced in Kaduna state. However, the availability and price of these two commodities, maize and soybeans are largely dependent on seasonal fluctuations because Agriculture in Kaduna state and the country as a whole is largely rainfed. Cultivation and harvest of crops take place during the wet season with little farm activities happening during the dry season; hence, availability and price of their core raw materials are highly seasonal.



Through their facilities, Olam is stimulating the Nigerian poultry and fish farming sector by providing local farmers and distributors with high-quality feed and chicks at competitive prices, offering training for farmers on best poultry practices and creating thousands of direct and indirect rural employment opportunities.

Figure 7: Olam Poultry and Fish Mills

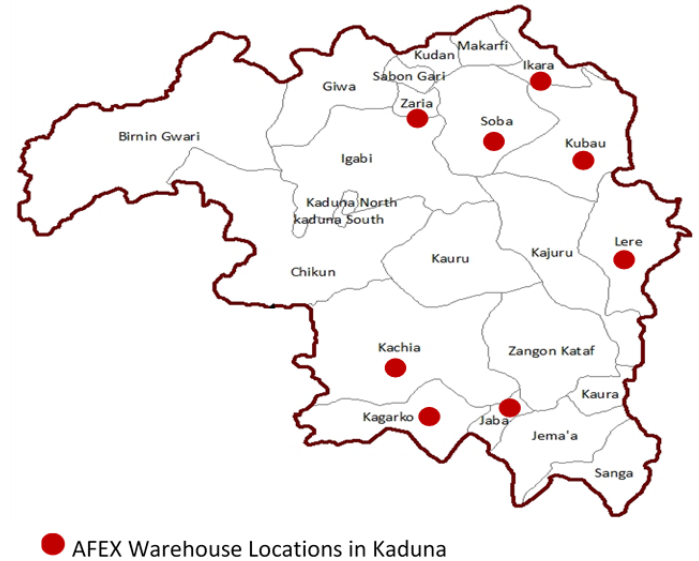
Company	Locations	Feeds Processed	Crops Processed	Average Monthly Feed Output (MT)
Olam Nigeria, Poultry and Fish Feed Mill	Kaduna	Poultry feed, Fish Feed	Maize, Soybeans,	18,000
	Ilorin	Poultry Feed, Fish Feed	Maize, Soybeans	10,000

AFEX Commodities Exchange Limited: Bringing Standards to the Heart of Agricultural Nigeria

AFEX Commodities Exchange Limited (AFEX) is Nigeria's first private sector commodity exchange. The company was established in 2014 under the aegis of Africa Exchange Holdings Ltd., a limited liability company with principal investors – EAEH Investments Ltd, Consonance Investments Managers Ltd, Heirs Holdings Ltd.

Since inception, AFEX Nigeria has made great strides in reaching smallholder farmers and providing solutions for problems in the country's agricultural sector through such services as the deployment of storage services, the provision of electronic warehouse receipts, and the facilitation of input financing. AFEX has since reached and enhanced the livelihoods of over 100, 000 farmers and aggregated c.135,000 metric tons of grain. The organization aims to pursue an overarching strategy of creating a national trading platform and supply chain network in carefully identified value chains through which farmers and commodity merchants can access commodity and financial markets.

Figure 8: AFEX Warehouse Locations in Kaduna State



AFEX Nigeria presently operates 12 Accredited Warehouses in Kaduna state. These warehouses provide full quality and quantity guarantees on received grains and preserve the value. Farmers can store and then sell when prices stabilize in the market and earn a decent income. Registered Farmers at the warehouse can also get access to input financing facilitated by AFEX.

Figure 9: Spread of Registered Farmers by Warehouse

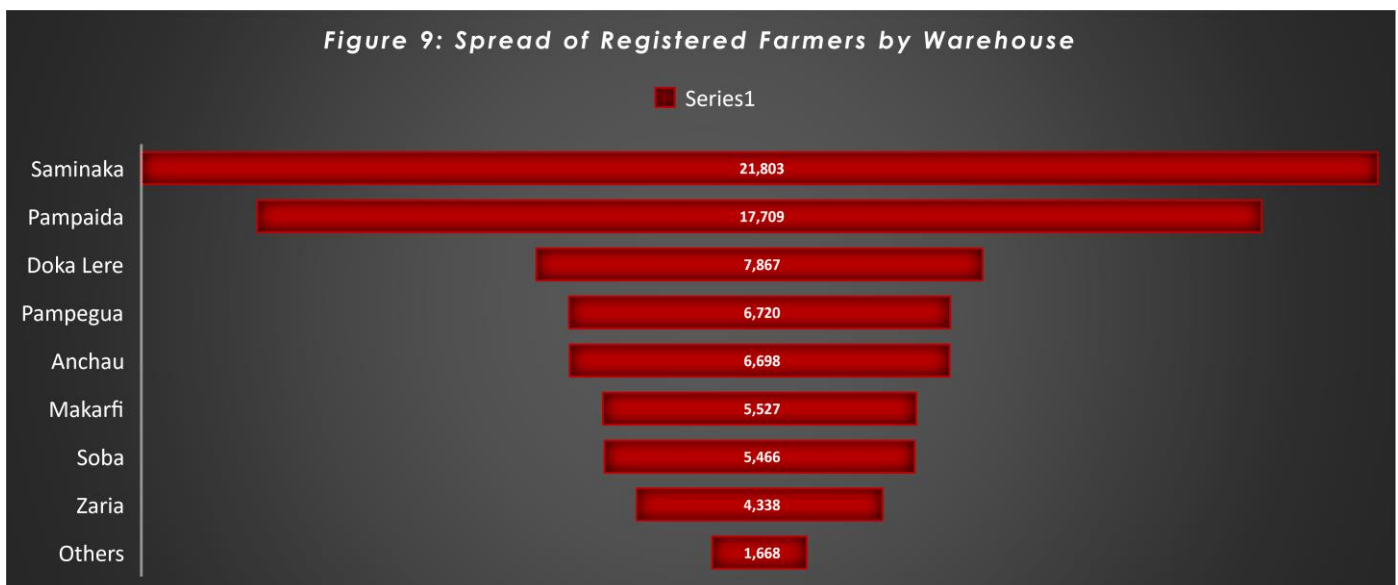
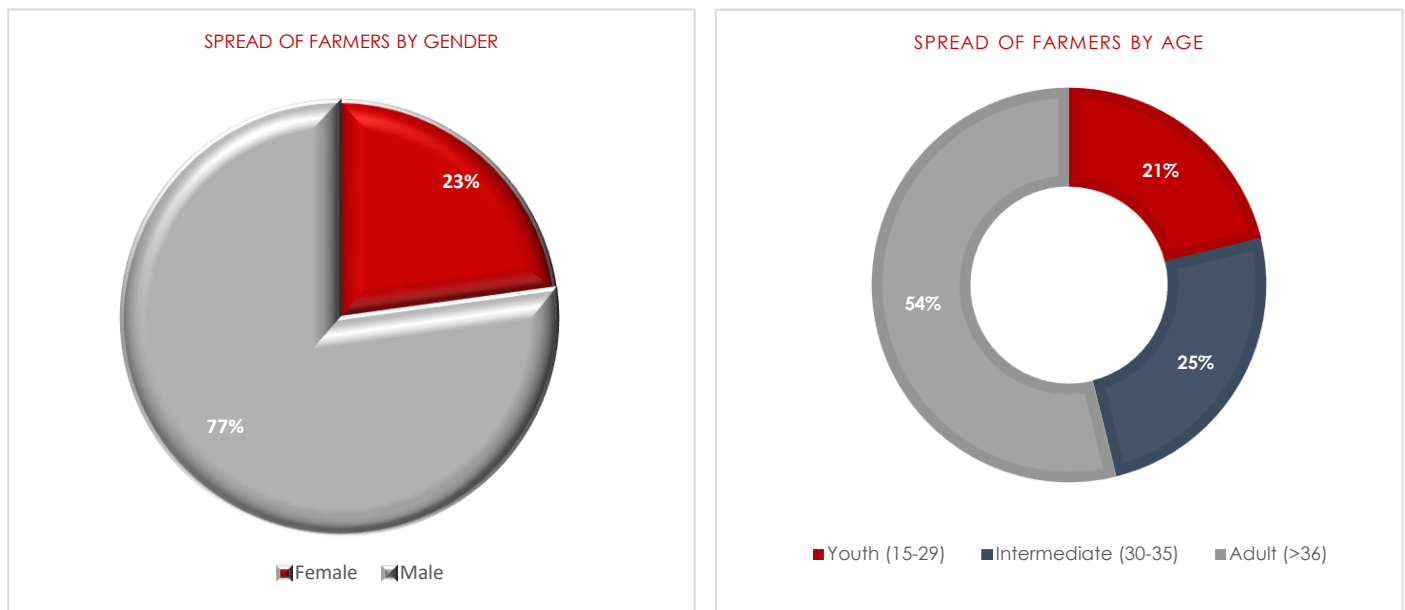


Figure 9: Spread Of Farmers by Gender and Age.

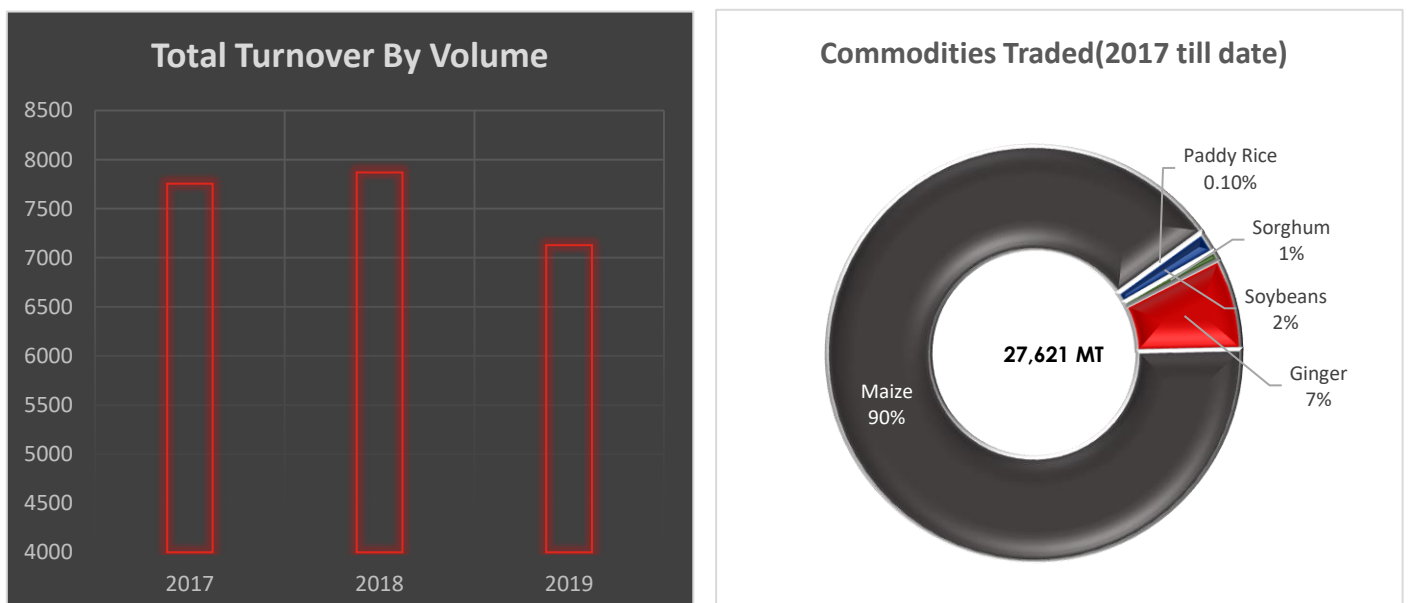


There are presently 77,780 Registered AFEX Farmers in Kaduna state with the majority located in Saminaka and Pampaida which are both in Lere LGA of Kaduna state. About a quarter of them are female farmers while the majority are male farmers. More than half of the farmers are middle-aged while youths and adult farmers make up 36% of them.

AGGREGATION AND STORAGE

From inception till date, warehouse transactions in 11 major AFEX warehouses located in Kaduna state had a total turnover of N3.14bn in value and 27,621 MT in volume. The warehouse with the highest contribution is Saminaka Warehouse as it contributed 43% of the total turnover. This is due to the large capacity of the warehouse and its proximity to both the big Saminaka market and farmlands.

Figure 10: Kaduna Warehouse Activities



AFEX prioritizes quality and quantity guarantees of commodities brought to all its warehouses. This means that all commodities that are traded at any of our warehouses are graded and standardized by our experts. The grading process is carried out to determine the quality of the commodity being received. In 2019, 94% of the total volume of commodities traded in our Kaduna warehouses were commodities of high grade, meaning that impurities were found in very few commodities traded at the warehouse. This shows that Kaduna farmers do not only prioritize quantity but also maintains crops of good quality. Maize contributed the largest (90%) to the total turnover by volume to trades carried out in 11 AFEX warehouses located in the state. This is no surprise since maize is predominantly produced in Kaduna state, as it is the largest producer of maize in Nigeria.

FINANCIAL INCLUSION

Most farmers in rural Northern Nigeria are financially excluded, and where they have bank accounts, usage is extremely minimal due to an array of issues bothering around ease of access. Being financially included means farmers can transact formally outside open markets where they get paid in cash. With Bank Verification Number (BVN) being a critical data point for all government interventions in agriculture in Nigeria, it becomes even more important and urgent that we ensure our farmers have bank accounts, debit or prepaid cards, and mobile wallet accounts.

Figure 11: Archetype of the Debi issued to Farmers as part of AFEX inclusion exercise



AFEX is licensed as an aggregator within Nigeria's financial inclusion ecosystem, meaning we can register farmers and issue BVNs, open bank accounts, and also facilitate transfers, receipt of cash and bills settlement. AFEX promotes financial inclusion through a partnership with financial institutions, local governments and other stakeholders. This partnership has helped to ensure that farmers become bankable and use bank accounts, debit or prepaid cards, and mobile wallet accounts.

AFEX also has a partnership with Nigeria Incentive-based Risk Sharing for Agricultural Lending (NIRSAL) a Central Bank of Nigeria fully owned subsidiary, which provides credit risk guarantees for credits to agriculture. NIRSAL has provided between 50 to 75% credit risk guarantees for AFEX listed instruments, which has helped to increase the rating of the assets.

GENDER INCLUSION



AFEX understands that economically empowering rural women by making agriculture more productive and lucrative is an important step in eradicating extreme poverty. Where value can be distributed fairly, allowing greater participation that leads to increased economic benefits, women can improve, not only, their reality, but that of their households and communities. We have seen this picture come alive particularly in a five-star farmer cooperative – the Nassarawa women cooperative – that AFEX began engaging in 2016.

Since working with AFEX over the years, the Nassara women cooperative has rapidly expanded member numbers and consequently, the amount of land available to them to farm and the yields from their production activities. These group benefits have flowed down to an individual level; allowing the women to impact their immediate households and communities in a visible ripple effect that sees them contributing to improved food and nutrition practices, increased access to education for rural children, and better rural livelihoods and overall well-being.

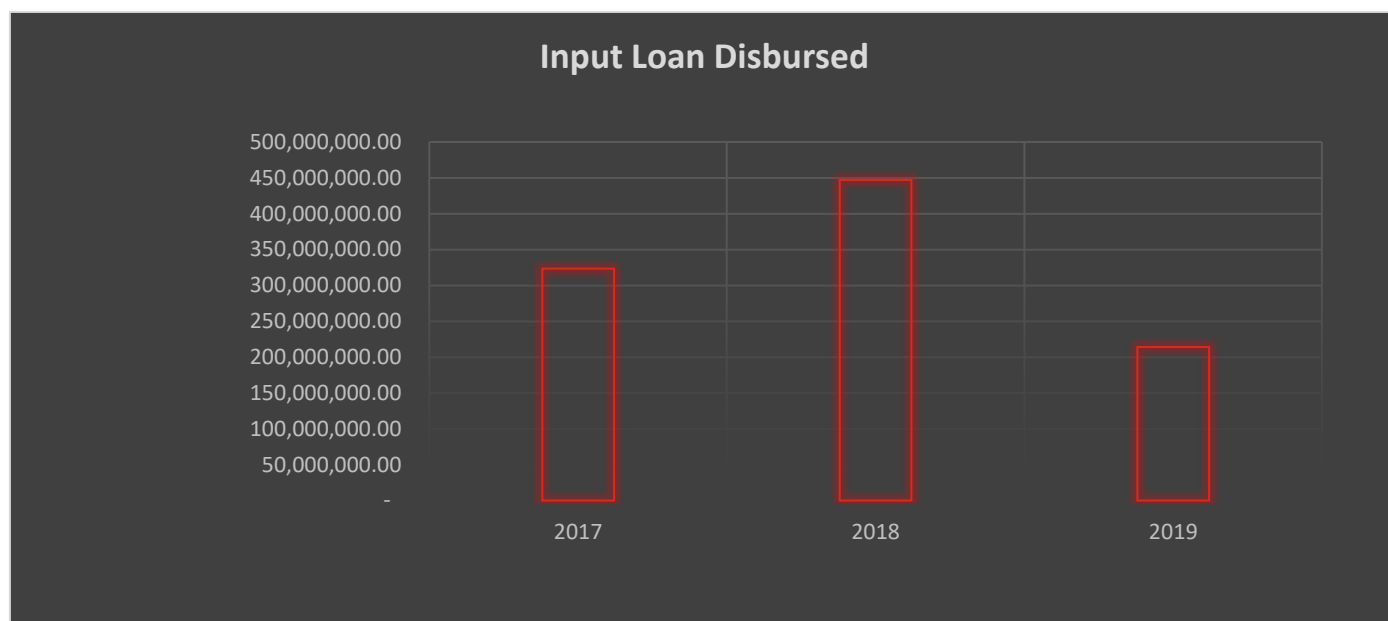
Post engagement with AFEX, with a sustained partnership over four farm cycles, the cooperative has grown to over 1000 women, who have seen an increase in productivity and yields by up to 150% through the use of quality inputs accessed through AFEX's platform. Our Nasarrawa women present a ready example of a positive cycle of change, upturning the tale of a cooperative barely able to support itself to one that has seen increased yields and productivity since the beginning of our relationship in 2016.

INPUT FINANCING PROGRAMME

One of the core mandates that AFEX was set out for was to provide scalable solutions that can unlock capital at the right cost and structure for African smallholder farmers, and support their livelihoods and income-generating capacity. To meet the growing demand from its buyers of commodities locally and internationally, and to expand its income-generating base, AFEX also

sees a commercial need to provide solutions that solve a critical challenge of most African farmers – input financing.

Figure 12: Input Loan Disbursed in Kaduna State



AFEX facilitates the extension of credit to farmers as the Exchange's transaction provide an end to end overview of the transaction structure. Since Farmers are usually burdened with a high cost of inputs with little or no access to financing, AFEX has cultivated effective partnerships with upstream players who make input available to farmers. The input note aims to facilitate this by providing access to financing for smallholder farmers to obtain quality inputs while at the same time providing an avenue for people interested in diversifying their investment portfolio to do so. 2018 witnessed the highest loan value disbursed in Kaduna state as the total loan disbursement in the state till date is valued at N1.4 bn this is due to the number of loan programmes carried out in that year.

AFEX IMPACT IN KADUNA STATE AGRIBOOSTER PROGRAMME

A farmer-centred market development model called 'Agribooster Offer' was initiated by OCP AFRICA in partnership with AFEX Commodities Exchange Limited and LAPO Microfinance Bank Limited to implement a pilot project in Kaduna State in 2017 to demonstrate the scalability and sustainability of the proposed model. It aims at supporting smallholder farmers to get access to good quality inputs and financial services, enhance market linkages, and benefit from training on Good Agricultural Practices (GAP). The program's end goal is to help farmers increase their yields and hence their revenues

Figure 13: Agribooster Project

AFEX Farmers Registered & Trained

604 Lead Farmers &
4000+ Other Farmers

Inputs disbursed

Fertilizers: 40,000 bags
CPP: 2,000 Litres
Seed: 500 Bags



Loans

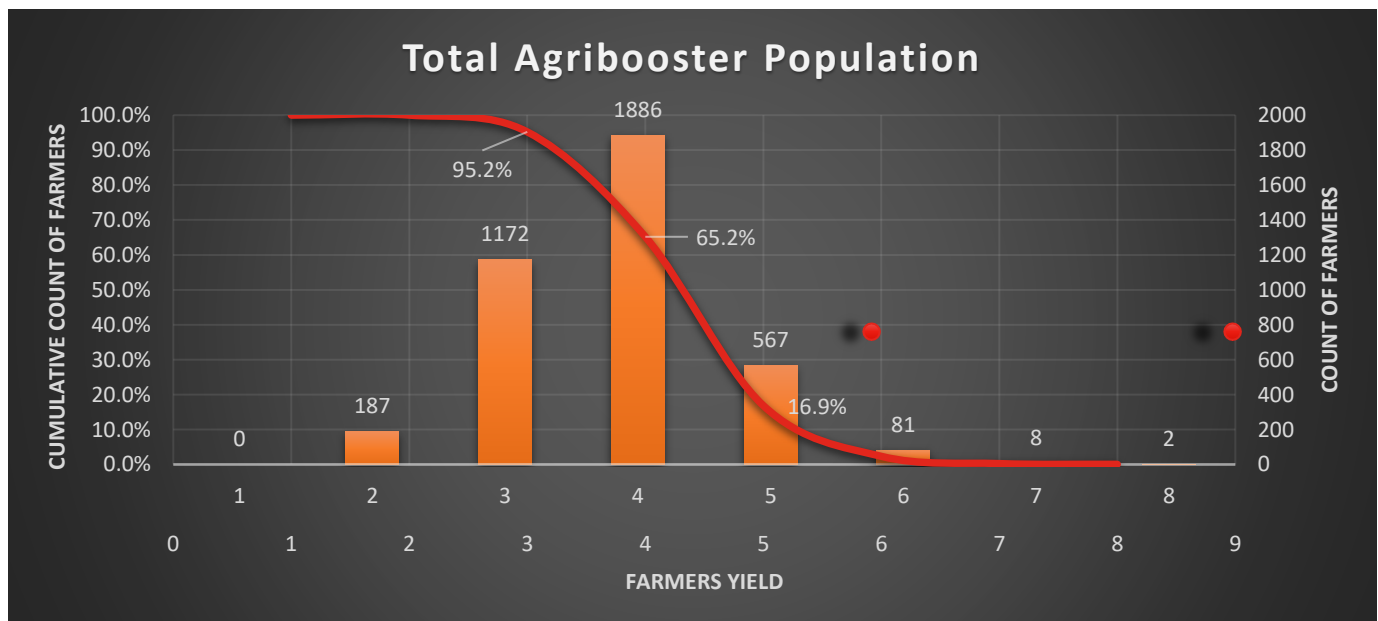
Over \$540k (=N= 200m)

Harvest

About 20,000MT of Maize was harvested

This strategic partnership allowed the sharing of efforts and feeds from each partner's experience. Each partner had a role to play; OCP AFRICA supplied high-quality fertilizer and training on application & GAP to Five thousand (5,000) AFEX Farmers registered in Kaduna State. Other input providers were included in the scheme to provide farmers with high-quality CPP and hybrid seeds. AFEX facilitated farmer's access to the agreed bouquet of input (including but not limited to Seeds, CPPs, Fertilizer products – OCP products and other brands, etc. As a Commodities Exchange, AFEX also facilitated access to markets for farmers' output after harvest. LAPO MfB provided loans to registered farmers which facilitated the purchase of the input packages.

Figure 14: Total Agribooster Population Yield



After the Agribooster project in 2018, Results showed that 65.2% of the farmers reached 4MT and above, three times the national average yield. 16.9% of farmers had above 5MT.

Agribooster Farmer Training and Engagement



PROJECT MAINOMA - IN PARTNERSHIP WITH AGRA

The Alliance for a Green Revolution in Africa (AGRA) is working with AFEX to provide access to financial and commodity markets to smallholder farmers in Kaduna State. Project Mainoma kickstarted in 2018, however, full operationalization and funding of the project started in 2019 and is still ongoing in 2020. The project is providing access to financial and commodity markets to smallholder farmers in Kaduna State, creating affordable credits to enhance production, market access to sell their products upon harvest, and cash liquidity to delay sales of harvested products to maximize returns. The key focus crop value chain is Maize.

Over the years, Project Mainoma has helped to increase farmer household income through market linkages, access to credit, and education – good agricultural practice. Special structures - such as the AFEX Model links agrarian communities and staple crop processing zones to a network of storage facilities under collateral management and a warehouse receipt system, a centralized trading platform, clearing and settlement systems, and advantageous membership structures. The key characteristics of this model include a bundle of inputs and services provided by one entity with a high level of accountability and assured market for output which has been created to drive adoption across age and gender divides, as more than 25% of the project's activities have been focused on women and youths.

The activities begin with AFEX coordinating for its outreach activities in Kaduna. The commercial team kickstarts with having a strategy meeting centred around plans to meet the objectives of the project. Outreach officers are then sensitized and trained for farmer education. The outreach officers then start the outreach and extension services In January. Farmers are met in communities, profiled, registered, and educated on the AFEX model and the general role of AGRA in the intervention. Inputs are disbursed to eligible farmers and repayment is made at the end of the season with farmers repaying loans with grains.

Farmer engagement and Training

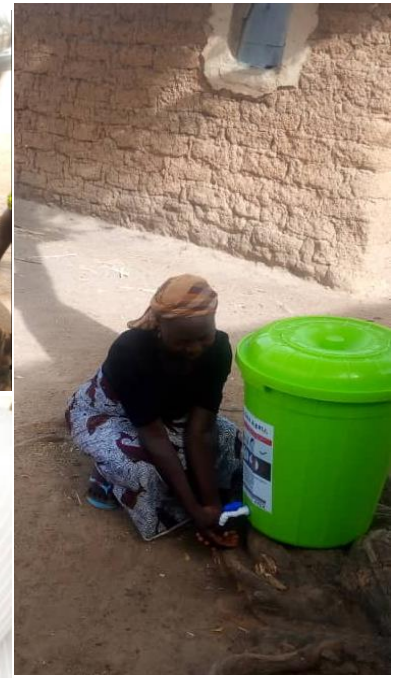


Farmer registration**Train the Trainer session****Loan Program Profiling****Input Disbursement****Farmer Monitoring & Evaluation****Field Harvest Activities**

AFEX Harvest Party



COVID-19 Safety measures observed-2020



Outlook

The ministry of Agriculture Kaduna state has laid down a 5 years agricultural policy for the year 2021-2025. To achieve the goal of the rapid transformation of agriculture and acceleration of economic expansion in Kaduna State, this Policy has the following specific objectives:

- I. Improve agricultural productivity; generate employment in the sector and transit significant proportion of farmers from subsistence farming to commercial agriculture.
- II. The revitalization of the rural economy and the promotion of agricultural investment to ensure food and nutrition security
- III. Improve storage and transport by expanding the capacity of storage and refrigeration facilities for key crops (e.g. grain silos, dairy, vegetables cold chain equipment and development of meat value chain)
- IV. Attract private sector investment in agro-processing, agricultural inputs production and services (mechanization, extension, aggregation, credits flow) on crops where the State has competitive advantages (e.g. meat processing, dairy processing, tomato paste production, vegetable oils milling, feed and flour milling, poultry products and ginger-based products)

This policy is focused on agricultural value chain actors' well-being (those engaged in crops, livestock, poultry, dairy, forestry, and fisheries; and all other related activities) with the following targets:

1. Continuous growth in farmer incomes by making the growth process inclusive of small and marginal farmers.
2. Ensuring sustainable, stable, and scalable agricultural growth.

Strategic Points of Action

Kaduna state is the leading agricultural state in Nigeria and has made tremendous progress towards advancing the state of Agriculture in the state; however, Agricultural productivity is still lagging. Although food production has increased over the years, it is however not meeting consumption levels; this harms the food security of the state and the nation at large. Poor infrastructure and unorganized markets are key issues that are prevalent in Kaduna state as this has a cascading effect on postharvest losses and the productivity of the sector.

AFEX Nigeria has a strong presence in Kaduna state. The exchange started its early warehouse activities in the state since its inception. Based on years of experience and learning, the exchange has been able to identify gaps that exist in the value chain. The following are recommendations that can help players and the government of Kaduna state make more informed decisions regarding Agriculture in the state.

1. **Public-private partnership (PPP) model; the game-changer:** Kaduna state agricultural sector will barely survive without the PPP model which can be described as the lifeblood of Agriculture. All agricultural stakeholders can transform the sector at multiple levels by drawing their collective power together. This can be achieved with the state government providing and co-financing the back-end of the value chain, and the private sector and farmer contributions doing the rest. the agricultural sector could remain a primary engine of rural growth and poverty

reduction in Kaduna state and the country at large. AFEX has worked with the government on projects relating to financial inclusion and improving farmer productivity over the years.

2. Build Farmer resilience to unforeseen shocks

Unforeseen shocks can be security and environmental related. Nigerian agriculture is highly seasonal; rainy season farming is prevalent in the state. However, in some cases, too much rain or very little rain can have a huge effect on productivity. Kaduna south and some other parts of the state face insecurities. The frequent insecurity challenges happening in the state make it difficult to take long term decisions as there are no warnings before occurrences and the safety of both staff and farmers are at risk. Monitoring and giving early warning signals about such environmental and security issues can help prevent losses (Life and farm)

3. Establish and Invest in innovative and smarter Value-chain

Kaduna state government aside funding should create an enabling environment for private investments. This can be done through duty exemptions, tax rationalisations, Priority sector lending etc. The private sector can improve the state of Agriculture in the state by providing farm extension services, enhance price realization, cut out intermediaries and improve the supply chain through forward and backward linkages.

4. Improve access to market, Credit and Technology

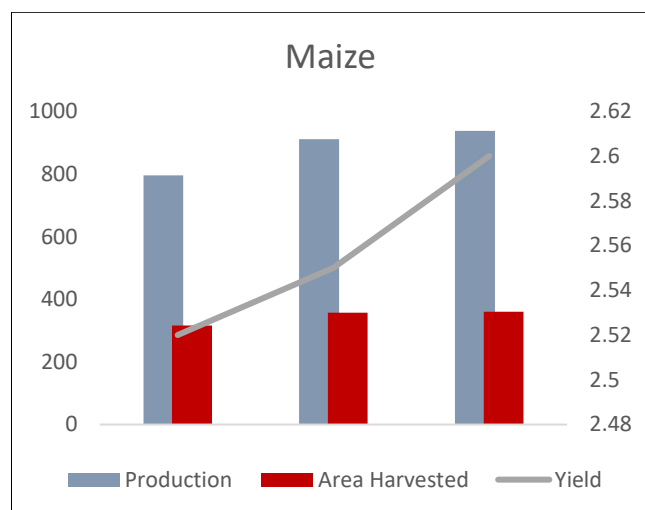
The privates and the government can bring cutting-edge technologies and programmes that can help boost the state's agricultural sector. Information technology and Biotechnology can be used to transform the sector by providing farmers access to vital information and use of the latest technology to help them in areas such as weather patterns, fertilizer use etc. AFEX is reputable in disrupting Agriculture with the use of smart technology Access to credit and Market. The use of technology to collate, analyse and disseminate market information to the general public; the introduction of mobile banking and registration of farmers; the provision of access to credit to improve farmer productivity; the use of technology to measure and standardize grains of utmost quality are some of the many ways AFEX has improved Agriculture in Kaduna state and other states where we have a strong presence.

Appendix

TOP FOUR COMMODITIES CULTIVATED

Maize

When compared to other states, Kaduna is the highest producer of maize which is used increasingly for the production of animal feed, Household consumption and Industrial use. It is produced across all 36 states in Nigeria and termed as the most important cereal after rice in Nigeria.



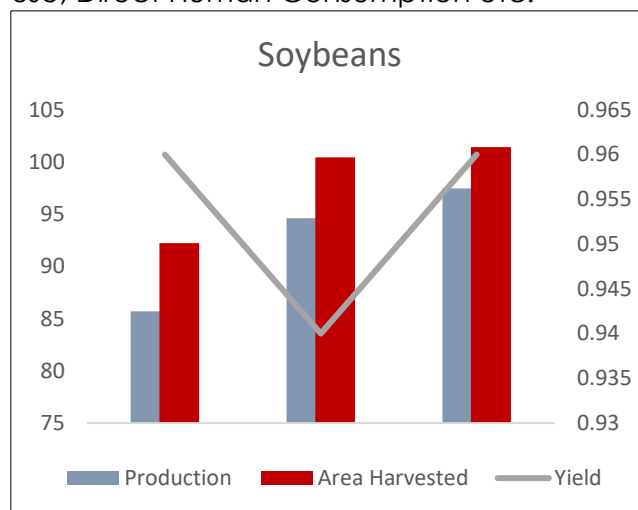
The total estimated land area for the crop in 2018 was 360,180 hectares as compared with 315,790 hectares in 2016, indicating a 14% increase. The production output also increased to 937,820 MT in 2018 compared with 795,590 MT in 2016 with a percentage increase of 18%. The yield of 2,190 MT/ Ha was recorded in 2018 which had an increase of 3% above 2016 yield of 2,520 MT/ Ha.

The LGA's where maize is predominantly produced are Birnin gwarri, Igabi, Giwa and Zaria.

Soybeans

Kaduna state is the second-largest producing soybean state in Nigeria with a production

quantity of 97,480 MT, trailing behind Benue state (241,190 MT) which is the largest producing state in Nigeria. Soybeans is valued for its meal and oil contents which are extracted and used for Animal feed, Industrial use, Direct Human Consumption etc.



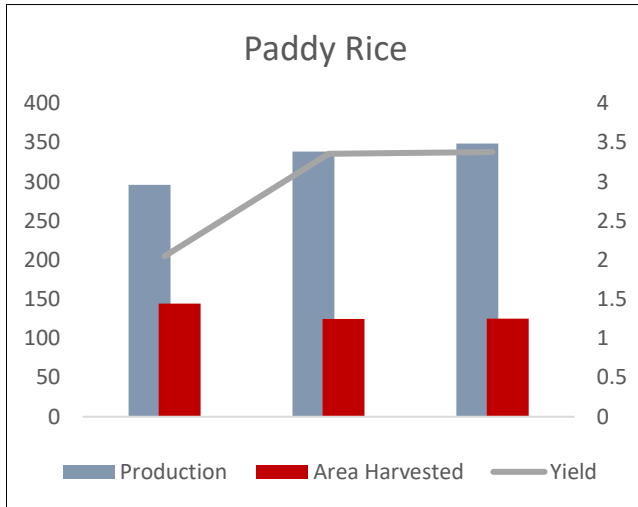
The state's crop production output for the year 2018 was 97,480 MT which is higher than 85,710 MT with an increase of 14% over the three years under study. About 101,440 hectares were cultivated in 2018 as against 92,230 hectares cultivated in 2016; an increase of 10%. The increase in production output can be said to be due to the rapid growth in the poultry industry as soybean meal serves as an important constituent in poultry feed production.

Top producing LGA's where Soybeans are produced in Kaduna state is Kauru, Lere and Kubau.

Paddy rice

Paddy Rice is a major staple food with consumption surpassing its production in Nigeria. It is consumed in almost every household in Nigeria and grown in all 36 states of the federation. Since Paddy Rice is grown

in waterlogged soil, rice farming always takes place during the wet season as irrigation facilities are less in the state.



In 2018, Kaduna state produced a total of 348,970 MT reflecting an 18% increase against 2016 production quantity of 295,980 MT with a yield of 2.19 MT per hectare in 2018.

NAERLS report 2018 indicated that an estimated land area of about 159,150 hectares was devoted to rice cultivation in the state compared and 144,310 hectares in 2016. This shows a decrease of 13% indicating that less land is being allocated to the cultivation of paddy rice in the state.

The LGA's where Paddy rice is predominantly produced are Kauru and Kajuru LGA's.

Ginger

Ginger is a major spice crop grown in Nigeria and Kaduna is leading the pack as the major

producer of Ginger in the country. Ginger root or ginger is widely used as a spice and folk medicine. It is used in most cases dried and they add to the aroma of household meals. It is a major Export crop in Nigeria as Nigeria. Top three local Government Area's where Ginger is predominantly produced is Kachia, Kagarko and Jaba LGA's.



Production in 2018 was 523,540 MT compared to 468,90 MT in 2016 representing 12% Increase. The total land area allocated to production in 2018 was 48,930 Hectares against 43,100 Hectares in 2016, indicating an increase of 14%. The yield in 2018 was 10,700 MT/ha compared with 10,880 MT/ha in 2016 indicating that yield per hectare had a 2% decrease over the three years under study.

KEY COMMODITIES MARKETS IN KADUNA STATE

Major Commodities Markets in Kaduna State				
S/N	Market	LGA	Market Days	Major Commodities Traded
1	Anchau Market	Kubau LGA	Tuesday's	Maize, Sorghum, Soybeans, Paddy rice
2	Ikara Market	Ikara LGA	Tuesday's and Friday's	Maize, Soybeans, Pepper
3	Soba Market	Soba LGA	Wednesday and Saturday	Maize, Soybeans, Paddy rice
4	Tudu market	Soba LGA	Thursday	Maize, Soybeans, Paddy rice
5	Kona Dangora	Pampaida LGA	Fridays	Maize, Soybeans, Sorghum, Paddy rice
6	Pambegua Market.	Kubau LGA	Fridays	Maize, Soybeans, Paddy Rice
7	Tudun sebu Market		Thursdays	Maize, Soybeans and Sorghum.
8	Galadimawa		Wednesdays	Soybeans and Millet
9	Saminaka Market	Lere LGA	Wednesdays	Maize, Soybeans, Sorghum
10	Doka lere Market	Lere LGA	Thursdays	Maize, Soybeans, Paddy rice
11	Mariri market		Sundays	Maize, Soybeans, Paddy rice
12	Gure Market		Tuesdays	Maize, Soybeans, Paddy rice
13	Makarfi Market	Makarfi LGA	Wednesdays	Maize, Soybeans, Paddy rice, Sorghum, Chilli pepper, Cowpea
14	Border Market	Kachia LGA	Mondays	Ginger
15	Kubacha Market	Kachia LGA	Mondays	Ginger, Turmeric
16	Maraban Walijo	Kachia LGA	Wednesdays	Ginger
17	Kenyi Market	Kachia LGA	Thursdays	Ginger
18	Kwoi Market	Kachia LGA	Friday	Ginger
19	Kuda Market	Kachia LGA	Saturdays	Ginger